

Table S2. Chemical composition of the metamorphic the metasedimentary and meta-igneous rocks from the Wuguan Complex and Liuling Group. The oxides of the major elements are given in %, and the content of trace elements is given in ppm.

Sample	GQ20	GQ23	GQ25	GQ27	GQ29	TW43	TW44	TW53	TW54	TW55	TW56	TW58	TW61	TW68
Affiliation	Liuling	Liuling	Liuling	Liuling	Liuling	Liuling	Liuling	Wuguan	Wuguan	Wuguan	Wuguan	Wuguan	Wuguan	Wuguan
Al ₂ O ₃	14.88	17.09	20.28	10.17	9.85	16.91	16.74	14.24	13.01	14.52	12.67	12.87	20.96	12.46
CaO	5.04	4.15	0.36	3.52	10.42	0.33	0.71	2.59	9.77	5.74	9.22	7.98	0.57	8.87
Fe ₂ O ₃	6.14	7.54	8.34	4.03	3.91	5.21	6.63	5.46	14.73	6.93	15.33	15.63	7.89	14.14
K ₂ O	3.00	2.36	7.67	1.76	1.99	4.70	4.65	2.33	1.04	2.15	0.74	1.06	2.67	0.68
MgO	3.80	4.95	3.15	2.34	2.68	3.01	3.06	2.88	5.41	4.45	5.24	4.50	2.72	5.30
MnO	0.08	0.08	0.04	0.06	0.07	0.03	0.09	0.06	0.22	0.13	0.26	0.24	0.06	0.18
Na ₂ O	2.73	3.69	0.24	0.56	1.30	0.79	0.74	3.16	2.65	1.90	2.61	3.18	0.64	2.66
P ₂ O ₅	0.15	0.15	0.19	0.15	0.11	0.19	0.14	0.15	0.48	0.13	0.54	0.56	0.16	0.40
TiO ₂	0.68	0.75	0.89	0.53	0.59	0.80	0.71	0.75	2.96	0.67	3.46	3.43	0.89	2.83
SiO ₂	61.04	56.44	54.85	74.21	59.23	64.26	64.16	66.92	47.62	61.29	47.09	49.49	59.25	51.26
Loss	2.21	2.57	3.42	2.45	9.47	3.27	1.68	0.83	1.80	1.73	2.42	0.71	3.71	0.74
Total	99.76	99.78	99.43	99.78	99.64	99.50	99.31	99.39	99.70	99.63	99.58	99.65	99.52	99.53
Li	44.2	45.4	38.6	16.3	38.8	44.3	62.3	36.0	9.70	24.6	14.9	13.3	61.7	9.61
Be	2.96	2.83	1.96	1.21	1.18	1.73	1.40	2.25	1.02	1.38	1.13	1.61	2.40	1.44
Sc	16.7	20.7	23.7	9.87	11.7	18.9	17.7	15.7	35.8	24.7	35.3	35.4	11.6	31.8
Ti	4089	4554	5453	3194	3637	4810	3950	4628	18034	4049	20894	21592	5329	17166
V	110	143	149	60.4	73.2	134	117	104	382	154	411	370	129	351
Cr	90.8	107	125	64.2	115	128	115	115	79.4	231	90.4	36.7	124	51.1
Mn	649	657	277	496	570	242	667	464	1717	1057	2018	1903	468	1409
Co	17.2	21.3	23.4	10.8	6.68	17.4	19.0	19.4	51.1	25.5	49.1	46.5	28.8	46.7
Ni	42.1	51.0	57.9	27.2	14.4	47.1	56.3	31.9	54.6	49.5	54.3	39.8	59.2	48.3

Cu	1.03	1.08	1.20	4.43	2.10	51.3	23.6	13.1	94.2	27.5	101	251	26.2	192
Zn	105	91.7	77.3	29.4	41.2	83.4	101	82.1	155	77.8	154	133	182	99.0
Ga	22.5	26.7	32.1	14.4	12.8	25.6	21.4	22.3	24.0	18.6	24.9	26.3	30.4	21.6
As	5.58	6.34	7.25	6.72	3.68	4.21	1.36	4.08	5.71	4.09	5.67	4.84	2.65	4.47
Se	0.71	0.76	1.03	0.73	0.66	1.04	0.99	0.63	1.23	0.73	1.43	1.77	0.90	1.25
Rb	149	110	298	93.1	112	183	170	112	23.7	103	16.1	32.6	147	8.03
Sr	157	186	35.4	238	546	84.9	44.6	148	347	216	328	310	69.8	255
Y	26.9	26.0	38.0	21.9	17.7	18.5	26.5	18.6	36.9	23.8	41.6	59.0	20.9	38.9
Zr	171	156	188	212	204	216	164	169	207	159	228	324	76.8	200
Nb	14.5	16.4	20.0	11.3	8.83	18.1	13.2	16.9	27.1	9.55	33.3	46.0	19.4	28.3
Mo	0.13	0.11	0.52	0.14	0.26	0.27	0.63	0.12	1.45	0.58	1.36	1.50	0.31	0.37
Sn	3.30	4.45	4.48	2.26	1.28	4.69	3.95	2.75	1.67	2.16	1.93	2.67	4.92	1.97
Cs	10.3	6.49	13.0	3.35	6.90	9.41	10.7	7.14	0.90	7.73	0.65	1.87	5.38	0.13
Ba	546	331	1363	389	331	799	765	632	413	425	323	350	578	179
La	36.3	38.3	53.8	29.9	23.6	39.1	31.0	23.8	27.1	23.3	32.9	38.7	41.0	26.9
Ce	68.5	76.4	99.8	56.7	44.5	68.3	60.4	45.8	57.9	45.8	69.9	81.8	78.0	56.0
Pr	7.70	8.26	10.9	6.35	4.89	8.30	6.87	5.17	7.46	5.28	8.94	10.5	9.07	7.15
Nd	29.3	30.6	40.3	24.2	18.7	31.4	25.8	19.9	33.1	20.8	39.6	44.1	34.0	30.8
Sm	5.88	6.06	7.88	4.76	3.70	6.28	4.91	4.34	7.65	4.44	9.04	10.4	6.35	7.47
Eu	1.23	1.18	1.69	0.88	0.82	1.27	0.99	1.00	2.48	1.10	2.83	2.90	1.26	2.27
Gd	5.26	5.23	6.99	4.17	3.31	5.26	4.39	3.92	7.44	4.17	8.66	10.7	5.50	7.59
Tb	0.77	0.78	1.05	0.63	0.48	0.74	0.69	0.60	1.14	0.65	1.29	1.62	0.80	1.15
Dy	4.53	4.65	6.44	3.71	2.85	3.60	4.40	3.37	6.82	4.05	7.59	10.0	4.43	7.07
Ho	0.95	0.94	1.35	0.74	0.60	0.66	0.94	0.67	1.36	0.82	1.49	2.02	0.84	1.40
Er	2.67	2.77	3.84	2.15	1.76	1.85	2.79	1.88	3.56	2.35	3.95	5.45	2.28	3.74

Tm	0.42	0.45	0.59	0.34	0.29	0.28	0.43	0.29	0.53	0.37	0.58	0.82	0.32	0.57
Yb	2.76	2.83	3.65	2.11	1.93	1.77	2.92	1.87	3.21	2.39	3.47	4.85	1.97	3.44
Lu	0.40	0.41	0.54	0.31	0.29	0.27	0.42	0.27	0.45	0.34	0.49	0.69	0.28	0.48
Hf	4.47	4.22	5.04	5.11	4.95	5.36	4.23	4.18	4.74	3.90	5.15	7.38	1.99	4.97
Ta	1.07	1.16	1.34	0.82	0.67	1.43	0.99	1.36	1.67	0.80	1.93	2.67	1.51	1.80
Pb	10.3	6.73	12.0	4.00	2.96	47.1	10.9	26.4	3.45	18.9	8.44	4.99	30.0	3.31
Th	12.8	15.0	17.6	9.88	9.98	13.3	12.7	9.89	2.48	6.85	2.87	4.38	14.4	2.94
U	2.56	3.60	2.70	1.68	2.04	2.23	1.44	2.24	0.59	2.34	0.72	0.94	4.33	0.66